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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,394	04/09/2004	Anders Landin	5181-95101	1590

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MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
700 LAVACA, SUITE 800
AUSTIN, TX 78701

EXAMINER

PATEL, KAUSHIKKUMAR M

ART UNIT	PAPER NUMBER
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2188

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/821,394	Applicant(s) LANDIN ET AL.	
	Examiner Kaushikkumar Patel	Art Unit 2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/11/2005, 10/17/2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on July 11, 2005 and October 17, 2005 has considered by the examiner.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
3. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms, which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are:

No where in the specification, the specifics of proxy read-to-own (PRTTO) packets and proxy invalid (PI) packets are described, where the active device even though is owner, ignores the second type of packets as claimed in claims 1, 15, 31 and 44.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Independent claims 1, 15, 31 and 44 recite the limitation "if the active device is an owner of the coherency unit", the definition of "owner" as per present application specification par. 90, "a client device owns the coherency unit if it is responsible for providing data to another client which requests that coherency unit". Accordingly from prior two statements the "owner" is responsible for providing the requested coherency unit and the claim limitation recites ignoring the address packet, so the specification and claim language contradicts each other, also as per par. 189 of present application specification, "while the embodiments of fig. 22 uses different types of packets for gM and non-gM nodes, other embodiments may use the same type of packets in all nodes" indicates that although there are two different kinds of packets to perform similar functionality in different types of node (gM or non-gM), one type of packet can provide the same functionality in all types of node.

As per claims 7-12, 20-25 and 36-41, the limitations "proxy read-to-own" packet (PRTO) and "proxy invalidate" packet (PI) is not described in the specification. According to present application specification, pars. 189 and 191, "a PRTO packet may be used to initiate a similar (to PRTO modified) sub transactions in non-gM node" and "a

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PI is a similar (to PI modified) invalidating request used to invalidate data in caches and/or memory in a gl or gS node". The claims are dependent claims and the respective parent claims recites limitation "if the active device is owner of the coherency unit...ignore the second type (PRT0 and PI) of packets" accordingly it is not clear, if the packets are used to initiate similar transactions, such as PRT0 to gain read-to-own access and PI to invalidate the access right, then if the active device ignores the packets, then at the execution of PRT0 packet creates two owners (because the original owner ignores the PRT0 packet) and use of PI packet do not invalidate the access rights of the owner.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

7. Claims 1-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The independent claims 1, 15, 31 and 44 recite the limitations "first type of address packet" and "second type of address packet". According to applicant's disclosure, the first/second types of address packets are not described anywhere and thus lacks antecedent basis for the limitations and hence they are indefinite. Dependent claims 2, 13-14, 28-30 and 42-43 failed to correct the indefiniteness of parent claims and hence also rejected on same rationales.

Claim 1 recites the limitations "the inter-node network" and "an inter-node network" in lines 2 and 5 respectively. There is insufficient antecedent basis for these limitations in the claim.

Claim 26 recites the limitation "the global access state" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 28 recites the limitation "the additional node" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claims 31 and 44 recites the limitations "a plurality of devices in the node" and "plurality of devices includes an active device". The definition of active device, according to present application specification par. 53, is "devices configured to perform memory access to memory subsystems are referred to as active devices", accordingly is there devices amongst the plurality of device that are not active devices?

Claims 1-44 are rejected under 35 U.S.C. 112, second paragraph as being indefinite because independent claims 1, 15 and 31 includes limitations "if the global access state of the coherency unit is modified state then interface sends first type of address packet and if global access state is not modified state then interface sends second type of packet" and "if the active device is an owner of the coherency unit then active device ignores second type of packet and responds to first type of packet". The applicant's disclosure indicates three global states, gM (modified), gS (shared) and gl (invalid), accordingly, if the global access state is not modified state then the coherency unit can be either in shared state or invalid state. If the coherency unit is in invalid state then there is no active device with ownership of the coherency unit and its true for

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shared state (see claim 15 of copending application 10/821371, "wherein no active device in any of the plurality of nodes has an ownership responsibility for the coherency unit subsequent to receipt of proxy address packet by the active device", i.e. at the end of execution of shared read access to coherency unit, the global access state is gS, and in that state no active device in any of the nodes has ownership of the coherency unit). Thus, the condition "if active device is owner" is not true in all of the state conditions, and the results are non-statutory so claims are rejected as being non-statutory. Similarly claim 44 recites the terms "maximum allowable access right as write access or not write access" and the maximum allowable access rights are controlled through global access states of coherency units (par. 182) and thus rejected under same rationales as applied to claims 1, 15 and 31 above. The dependent claims also rejected due to their dependency on the rejected claims.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-44 rejected under 35 U.S.C. 103(a) as being unpatentable over Hagersten et al. (5,940,860).

In view of the ambiguities stated above Hagersten appears to teach limitations of claims 1-44.

As to claims 1 and 2, Hagersten teaches a system, comprising:

a node (fig. 2, item 102-104) coupled to the inter-node network (fig. 2) and including an active device (fig. 1, item 116), an interface (fig. 1, item 108, fig. 2, item 108, 220, 200) and an address network configured to transmit address packets between the active device and the interface (inherent in multi-node network of Hagersten);

an additional node coupled to the node by an inter-node network, wherein the additional node includes an additional address network (fig. 2, items 100, 150, 160, col. 5, line 65 – col. 6, line 65).

With respect to remaining limitations of claims, such as sending first type of address packets and second type of address packets depending upon the global states the applicant's disclosure is failed to properly describe such packets as explained above with respect to rejection of claims under indefiniteness and Hagersten, teaches a multi-node system, with global access states (fig. 4) coherency units with global access states including shared, modified and invalid (col. 7, lines 10-53) and sending/receiving address/data packets (inherent in computer networks) to gain access right (exemplary read-to-own (RTO) packet is explained, col. 9, line 54 – col. 10, line 44) and sending proxy packets (according to definition, packets initiated in other node in response to requesting node, par. 189, here requesting node sends RTO packet to home node to gain access right and in response home node sends data or retrieves from other slave node and then sends data to requesting node, which means proxy packets) to retrieve and send data to requesting node and subsequently invalidating access rights of responding node based on type of access right requested (i.e. invalidating in response

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to RTO packet). Further, according to applicant's disclosure (pars. 189 and 191), the use of first type and second type of packets are to initiated similar type of sub transactions and can be substituted with same type of packet, it is understood that use of first and second type of packet is mere matter of design choice and thus fail to define a patentably distinct invention over Hagersten.

As to claims 3-6, the claims recites read-to-share packets to gain shared access right to coherency units and transitioning of ownership or not, Hagersten teaches read-to-share packets and proxy read-to-share packets (figs. 8, 10 and 11, col. 10, line 45 – col. 11, line 27). Hagersten also teaches obtaining data from internal bus entity or from memory based on global access state (gS) is being shared state (col. 10, lines 63-67).

Claims 7-9, recite read-to-own packets as well as proxy-read-to-own packets, Hagersten teaches similar transactions (col. 9, line 36 – col. 10, line 44) and also proxy packets (remote read-to-own in combination with X-protocols, col. 12, lines 1-57) satisfying limitations of claims 7-9. It is also readily apparent from Hagersten, that in response to read-to-own packets, the node holding exclusive copy of data sends data to requester and transitions its global state to gI (invalid), and requester's state to gM (modified), indicating transitioning of access rights (col. 10, lines 39-44).

Claims 10-12 recite, invalidate packets, Hagersten teaches invalidating packets of a node providing data in response to requester's read-to-own packets (col. 10, lines 25-44, col. 12, lines 10-20).

As to limitations of claims 13 and 14, use of directory less (broadcasting) and directory protocols are known in the art and depending upon the configuration of system

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one having ordinary skill in the art would have used point-to-point type of protocol in the system containing large number of device to reduce the traffic or would have used broadcasting in system having smaller number of device to reduce the overhead of maintaining directory.

Claims 15-44 are also rejected under same rationales as applied to claims 1-14 above.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. The examiner also requests, in response to this Office action, support be shown for language added to any original claims on amendment and any new claims. That is, indicate support for newly added claim language by specifically pointing to page(s) and line no(s) in the specification and/or drawing figure(s). This will assist the examiner in prosecuting the application.

12. When responding to this office action, Applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present, in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections See 37 CFR 1.111(c).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaushikkumar Patel whose telephone number is 571-272-5536. The examiner can normally be reached on 8.00 am - 4.30 pm.

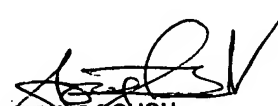
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung Sough can be reached on 571-272-6799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


kmp

Kaushikkumar Patel
Examiner
Art Unit 2188


HYUNG SOUGH
SUPERVISORY PATENT EXAMINER
3-5-07